AMENDMENTS TO THE CLAIMS:

Please amend claims 15 and 21, and add new claims 29-36 as indicated below. This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1.-14. (Canceled)

15. (Currently Amended) A device for crossing optical beams, comprising:

at least a first input optical waveguide directed along a first axis (x_1) and a second <u>input</u> optical waveguide directed along a second axis (x_2) inclined with respect to the first axis;

an optical crossing region at the intersection of said first and second axis; and

a photonic crystal having a regular periodicity in said optical crossing region.

16. (Previously Presented) The device according to claim 15, further comprising a first and a second output optical waveguide opposite said first and second input optical waveguide with respect to said crossing region and directed along said first and second axis, respectively.

17. (Previously Presented) The device according to claim 15, wherein said first and second axis have the same direction of a first and a second crystal axis, respectively.

18. (Previously Presented) The device according to claim 15, wherein said first and second axis are perpendicular to each other.

19. (Previously Presented) The device according to claim 18, wherein said photonic crystal extends in a square or a rectangular portion of an optical integrated structure and wherein said first and second input optical waveguides are coupled to respective edges of said portion.

20. (Previously Presented) The device according to claim 18, wherein the photonic crystal has a periodic array of holes arranged according to a square geometry.

21. (Currently Amended) The device according to claim 15, wherein said first and second ~~directions~~ axes define an angle of $\pi/3$.

22. (Previously Presented) The device according to claim 21, wherein said photonic crystal extends in a substantially hexagonal portion of an optical integrated structure and wherein said first and second input optical waveguides are coupled to respective edges of said portion.

23. (Previously Presented) The device according to claim 21, wherein the photonic crystal has a periodic array of holes arranged according to a triangular geometry.

24. (Previously Presented) The device according to claim 21, further comprising a third input optical waveguide directed along a third axis that intersects said first and second axis in said crossing region.

25. (Previously Presented) The device according to claim 24, further comprising a third output optical waveguide opposite said third input optical waveguide with respect to said crossing region and directed along said third axis.

26. (Previously Presented) The device according to claim 15, wherein at least one of said first and second input optical waveguides in an integrated waveguide.

27. (Previously Presented) The device according to claim 15, wherein at least one of said first and second input optical waveguides is an optical fibre.

28. (Previously Presented) The device according to claim 15, wherein said optical beams have predetermined wavelengths, wherein the photonic crystal is made of a bulk material having a first refractive index and includes a periodic array of regions having a second refractive index different from the first and having predetermined dimensions, and wherein the difference between said first and second refractive indices, the dimensions of said regions and the period of said array are so related to each other and to said wavelengths that, starting from an isotropic distribution of the wave vectors of said electromagnetic radiation within a first angular range that is twice the angular extension of the first irreducible Brillouin zone of said photonic crystal, the group velocity vectors

corresponding to said wave vectors are rearranged during propagation in said photonic crystal that at least 50% of the group velocity vectors are directed within a second angular range that is about one-third of said first angular range and the width at half-maximum of the distribution of the modules of the velocity group vectors is lower than about two-thirds of said second angular range.

29. (New) A method for crossing optical beams, comprising:

providing a photonic crystal comprising a dielectric material and a periodic array of regions realized in said dielectric material, the regions of the periodic array having a refractive index different from the refractive index of the dielectric material, said photonic crystal having a regular periodicity and having at least a first and a second crystal axes; and

feeding to the photonic crystal a first and a second optical beam along a first and a second direction corresponding to said crystal axes, so that said first and second optical beams cross each other in said optical crystal;

wherein said first and second optical beams have respective wavelengths suitable for photon guiding into the photonic crystal.

30. (New) The method according to claim 29, wherein feeding to the photonic crystal a first and a second optical beam comprises guiding said first and second optical beams into a first and a second input waveguide directed along said first and a second crystal axes, respectively.

31. (New) The method according to claim 30, further comprising receiving said first and second optical beams into respective first and second output waveguides opposite said first and second input waveguides with respect to said photonic crystal and directed along said first and second crystal axes, respectively.

32. (New) The method according to claim 29, wherein the periodic array of regions has a square geometry.

33. (New) The method according to claim 29, wherein the photonic crystal has a third crystal axis and the method further comprises feeding to the photonic crystal a third optical beam along a third direction corresponding to said third axis, so that said third optical beam crosses the first and second optical beams in said optical crystal, said third optical beam having a wavelength suitable for photon guiding into the photonic crystal.

34. (New) The method according to claim 33, wherein the periodic array of regions has a triangular geometry.

35. (New) The method according to claim 29, wherein said first and second optical beams have a same wavelength.

36. (New) The method according to claim 29, wherein said first and second optical beams have different wavelengths.